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# Unani Perspective of Nausea and Vomiting in Pregnancy: A Literary Research

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## ABSTRACT

Nausea and vomiting (*Qay'al-haml*) are considered atypical and almost inevitable feature of pregnancy. Concern about the harmful effect of medication on the fetus may cause many women not to seek treatment or to try alternative therapies for nausea and vomiting. The only medicine that is FDA-approved for Nausea and vomiting in pregnancy is doxylamine–pyridoxine combination; has reported side effects like somnolence, headache, dizziness, dry mouth, and hypersensitivity. According to Unani scholars, nausea and vomiting in pregnancy are mostly due to the accumulation of morbid material in the stomach. It is relatively uncommon in the male fetus. The objective of the study is to search classical literature of nausea and vomiting in pregnancy *(Qay'al-haml)* and to correlate with modern literature. The classical Unani sources viz., *Al-Qanun fi'l Tibb (Canon of Medicine)*, *Iksir-i-A'zam, Al Hawi fi'l Tibb (Continens Liber), Tarjuma Kamil al-Sana'a al-Tibbiyya, Dhakhira Khawarizm Shahi*, and *Tibb-i-Akbar* were reviewed. Further, different search engines were also browsed on the website to explore recent studies. Various Unani drugs are mentioned for the treatment of *qay'al-haml* including *gulqand*, *sikanjabeen sada, sharbat anar sheerin, sikanjabeen lemooni, jawarish anarain, mastagi, ilaichi* etc. In this literary research, an effort has been made to focus on the various causes, diagnosis and management of nausea and vomiting in pregnancy by Unani system of medicine. Some herbs and Unani compound formulations used in the treatment of *qay'al-haml* have also been highlighted.

**Key Words:** Nausea, Fetus, Doxylamine-pyridoxine, *Qay'al-haml*

## INTRODUCTION

Pregnancy and childbirth are basic life events vital to the maintenance of humankind and thus are considered physiological processes. The most common complication affecting women in the first trimester is nausea and vomiting of pregnancy (NVP),[1] occurring in 44% to 89% of pregnant women.[2] Nausea and vomiting in pregnancy is defined as the symptom of nausea and/or vomiting during early pregnancy when no other cause is responsible for it,[3] with an onset which often begins between the fourth and seventh week after the first missed menstrual period and resolves by the 20th week of gestation.[4] It is a syndrome caused by the complex interaction of genetic and environmental factors beginning during a unique period: organogenesis.[2] The risk factors of NVP include race, baby's sex, young maternal age, multifetal gestation, low income, low education level, history of premenstrual syndrome, and unwanted pregnancy.[5] The severity of NVP has a broad spectrum therefore it is critical to have a graded scale to track the severity of symptoms as a guide to determine the appropriate treatment and response to treatment. In 2002 Ebrahimi et al. introduced the Pregnancy-Unique Quantification of Emesis (PUQE) scoring system. The updated PUQE score assesses the severity of NVP based on three physical symptoms: nausea, vomiting, and retching over the previous 24 hours.[6]

## MATERIAL AND METHODS

The classical Unani sources viz., *Al-Qanun fi'l Tibb* (Avicenna's Canon of Medicine), Hakeem Azam khan's *Iksir-i-A'zam*, *Al Hawi fi'l Tibb* (Rhazes's Continens Liber), *Tarjuma Kamil al-Sana'a al-Tibbiyya*, Jurjani's *Dhakhira Khawarizm Shahi*, *Jamiul Hikmat*, *Khazainul advia, Afadae Kabeer* and *Ghana Muna* etc reviewed and searched for terms including *qay'al-haml, qay, matli, hamila ke awarizat, su'i-mizaj-i-mida, zofe mida, zofe jigar* etc. for aetiology, differential diagnosis, management.

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Major scientific databases namely Pubmed, Science Direct and Springer, Google scholar, Orchid, SCOPUS, Crossref, CAS Abstracts, Publons, CiteFactor, Open J-Gate, ROAD, Indian Citation Index (ICI), Indian Journals Index (IJINDEX), Internet Archive, IP Indexing, Scientific Indexing Services, Index Copernicus etc were searched for the most recent information regarding the modern concept of NVP, risk factors, aetiology and pharmacological management etc. using keywords nausea, vomiting, retching. Same databases were also searched for evidence of scientific work done on Unani drugs in NVP by using terms *zanjabeel, limoo, na'na, behi, hel* etc.

Approximately 15 books and 100 papers were browsed, some of them based on prevalence and studies, other papers were based on contemporary treatment, the complementary and alternative treatment of nausea and vomiting in pregnancy.

## AETIOLOGY

Aetiology of NVP remains unknown;[7] however various theories have been proposed for the aetiology of NVP, but a combination of several factors are probably involved (Table 1).

**Table 1: Factors involved in the aetiology of NVP**

| | |
|---|---|
| Evolutionary perspective | Normal levels of NVP protect pregnant women and their foetuses against harmful substances in food.[8] This maternal and embryonic protection hypothesis takes into account primary symptoms of nausea and vomiting, as well as secondary symptoms such as heightened olfaction, that may be related to increased hormone levels.[9] |
| Genetic | NVP and HG show patterns of familial aggregation. A higher risk of severe NVP/HG is found among women with mothers and/or sisters who have experienced severe NVP/HG. Monozygotic female twin pairs are found to be more concordant than dizygotic female twin pairs concerning experiencing NVP.[8] |
| Endocrine | Hormonal changes occurring in pregnancy are thought to be part of the aetiology of NVP and HG, and the most commonly proposed hormones involved include the hCG, oestrogen, progesterone and thyroid hormones.[1]<br>• **hCG:** The most implicated factor is hCG. when hCG concentration increases in body, nausea and vomiting also increase. Between 12-14 weeks of pregnancy hCG is its peak concentration, at the same time, there are more chances of NVP.[10]<br>• **Oestrogen and progesterone:** Estradiol & progesterone increases early in pregnancy and slowly rises throughout the remainder of the pregnancy.[11]<br>• **TSH:** Since hCG and TSH are structurally related, the observed association with hyperthyroidism may be explained by characteristics facilitating highly stimulating properties of the thyroid gland among women with HG. However, since hyperthyroidism itself is seldom a cause of nausea and vomiting, the focus is switched back to hCG.[8] |
| Psychological factors | Pregnant women with stress and emotional tensions often have this condition.[12] |
| Gastric dysrhythmias | Changes in gastric rhythmic activity may contribute to NVP. The intensity of nausea is significantly greater in pregnant women with gastric dysrhythmias than in those with normal electrogastrographic patterns.[8] |

## UNANI CONCEPT

In Unani classical literature, the term coined for nausea and vomiting in pregnancy is *Qay'al Haml.* According to Unani scholars, the cause of NVP is morbid material which accumulates in the cavity of the stomach or the muscles or layers of the stomach.[13,14] This material can be bilious, phlegmatic (often *balgham-i- milh*) [13, 15] or black bile.[13] More often nausea in pregnancy is due to bile, although bile is not a morbid material.[16] Bilious material causes irritation in the stomach and hence vomiting. Thick and viscous material firmly accumulated on the surface of the stomach produces nausea and retching not vomiting.

### Differential diagnosis of *Qay'al-haml*[14]

1. Non- obstetrical causes of vomiting are- *Haida*, *Su'-i-hadm*, *Waja-al mi'da*, *Quruh al-Mari wa Litha*, *Inqilab al- mi'da*, *Waram al-jigar, Qulanj*, *Waram al-tihal*, *Humma*, *Waram al-gurda*, *Deedan*
   If vomiting is not due to these diseases, then itself is a disease.
2. Enquire about diet before vomiting, improper food habit, rotten food then cause is attributed to *fasad-i -ghidha*. (food poisoning).
3. If vomiting is not persistent and is associated with disorders of the liver, gall bladder, spleen and uterus or any other organ of the body then the cause of vomiting is due to these disorders.
4. *Su'-i-mizaj*
   - *Su'-i-mizaj sa'da*: If no other cause of vomiting is diagnosed then it indicates that it is solely due to *su'-i-mizaj sa'da.* In this vomitus contains food particles but no other *khilt*. Urine is clear and diluted.

a. *Su'-i-mizaj harr sa'da*: Increase thirst, dry mouth, burning sensation in the stomach, *hadam qawi*, hot drinks are harmful.
b. *Su'-i-mizaj barid sa'da*: Decrease thirst, weak digestion, pale face, soft stool, increase appetite, belching.
c. *Su'-i-mizaj ratb sa'da*: Coldwater, wet and moist things are harmful. Dry food and a small quantity of food is beneficial, increase salivation, nausea.
d. *Su'-i-mizaj yabis*: Dry tongue, constipation, dislikes dry foods.

- *Su'-i-mizaj Maddi*: If manifestations of any *khilt* (humour) are present, then the type of vomiting depends upon *khilt* (humour) present in vomitus. If vomitus contain food particles along with *khilt*, then the cause of vomiting is *su'-i-mizaj maddi* and urine is viscous, turbid.

a. *Su'-i-mizaj safravi*: Bitterness in mouth, nausea, yellow urine, belching.
b. *Su'-i-mizaj saudawi*: All signs of *su'-i-mizaj yabis* including increase appetite, improper digestion, dark yellow pigmentation of the face, urine is a viscous and dark colour.
c. *Su'-i-mizaj balghami*: decreased appetite, fatigue, nausea, increased salivation, pale face, urine is white, vomitus contains phlegm.

5. With manifestations of cold temperament, there is tension in ribs and increased flatulence- then the cause is *riyah*.
6. Stretched ribs along with nausea, burning sensation in the stomach, stool with bad odour- the cause is then attributed to spoilt food.

## MANAGEMENT

### Pharmacological treatment[17-19]

The following table 2 shows the treatment of drug with their dose and mode of action.

**Table 2: Pharmacological treatment with dose and mode of action**

| Drug Name | Category | Dose | Mode Of Action | Any Other Remark |
|---|---|---|---|---|
| Doxylamine succinate | Antihistamine –pyridoxine hydrochloride combination | 20mg, Orally | Interrupt the histamine pathway | In 2013 US FDA approved doxylamine succinate (20 mg) an antihistamine and pyridoxine hydrochloride (20 mg) combination for the treatment of NVP |
| Meclizine, hydroxyzine ,dimenhydrinate, | Antihistamines | 25 mg, 50 mg and 50 to 100 mg, respectively, every 4-6 hours orally | Block the histaminic receptors in both vestibular-system (H1) and chemoreceptor trigger zone (H2) receptors | Both 1st and 2nd generation antihistamines are safe in pregnancy. |
| Metoclopramide | Promotility agents | 10mg orally, every 6 hours | increase LES pressure and gastric transit | ---------- |
| Phenothiazine | Antipsychotics | 30mg | It interferes with dopamine to bind its own receptors. | ---------- |
| Ondansetron | serotonin receptor antagonist | 4-8mg IV, every 8-10 hours | Block the signals generated by vomiting centre in brain | ---------- |

### Unani management

*Usoole ilaj* **(Unani principles of treatment)** may be divided into following sub headings: [20]

1. *Ilaj bi'l ghidha* (Dieto-therapy)
2. *Ilaj bi'l tadbeer* ( Regimental therapy)
3. *Ilaj bi'l Dawa* ( Pharmacotherapy)
4. *Ilaj bi'l yad* (Surgery)

***1. Ilaj bi'l ghidha* (Dieto-therapy)** [14,19,21]

1. Light diet is advisable which provides strength to the stomach and stops vomiting example *titar, chuza murg*.
2. Advise empty stomach- *rube reebas, rube hasram*.
3. Eat a pomegranate in the early morning and lies on the bed for 1 hour.
4. Avoid hot and warm food.
5. Avoid sweet dishes.

***2. Ilaj bi'l tadbeer* (Regimental therapy)** [21,22]

1. Moderate walk, light exercise.
2. *Dimad* on the abdomen- *badiyan* alone or along with *qinnab* and *sharab Rehani* or grape flowers and *gulnar or barge kiram, gulnar* and *karafs Roomi, tukhme razyana*

**3. Ilaj bi'l Dawa (Pharmacotherapy)**[16,19,21,22]

Nausea and vomiting in pregnancy is usually self limiting, if it is not alleviated advice *mullaiyanat, muqawwiyat -al-mi'da wa a'da ra'isa*.

1g. *Gule surkh* 9g, *gule gaozaban* 9g, *sapistan* 10g seeds, *unnab* 7g, *khubani* 7g, *aloo bukhara* 11g. All these drugs are soaked overnight in *gulab jal* and *kewda.* To this *maghze khyare shambar* 72 g, *sheere khisht, gulqand each* 48 g are added, grind the mixture and filter and give orally with 7 g *roghane badam*.

2. *Qurs- qaranphal, quste sheerin, jooz, sak, mastagi, agar, ilaichi, kababa* each of equal weight mix with *aabe-tursh or aabe-bihi* and make *qurs*(tablet). This tablet is a very useful formulation for vomiting and craving for food.
3. *Gulqand* and *sikanjabeen sada* 24 g is beneficial or *sikanjabeen lem*ooni or *murabba leemu kaghzi*.
4. Oral intake of *sharab rehani asfar* is beneficial.
5. *Rewand chini* before and after meal.
6. *Gile armani* , mix with *sharbate meeba*.
7. *Joshanda* of *assiur ra'as( lal sa'ag*) before and after meal.
8. *Joshanda shibt* alone and along with *shahed musaffa* is beneficial in NVP.
9. Mixture of *oode kham* and *mastag*i is also beneficial.
10. For pregnant women with *harr mizaj – sharbate turanj, sharbate leemu, sharbate ghura and sharbate anar* is beneficial.
11. *Safoof barai mitli- loung, qust sheerin, mastagi, jaipal, choti ilaichi, agar, kabab chini, sak* each of equal weight are finely powdered.

    Dose- four and half gram with *aabe-saib sheerin*.

12. If vomiting is due to *fasad-i-ghidha or safra* then oral intake of *sikanjabeen* 50 ml and salt 25 mg in water is effective as it helps in stomach wash, then drink *arqe-gulab* 120 g, and *sharbate anar sheerin* 25 ml.
13. If vomiting is due to gastric ulcers then *dimad* of *radia'at* and *sandal safaid*, *kishneez khushk* is effective

### 5.3 Mamoolate matab[13]

- *Tukhme khurfa, tukhme khyarain, zarishk, munaqqa* each 3 g, *aloo bukhara* 5, make *sheera* of all these in *arqe-gulab* 60 ml, drink after adding *sharbate tamar hindi* 12 ml.
- *Tabasheer, zareward, kishnnez khushk, post samaq, anar dana biryan* each 1 g, after grinding and straining add *sharbate ghura* 25 ml, *sikanjabeen lemooni* 25 ml and take orally.
- *Jawarish anarain* 7 g *with zarishk* 3 g, *sheera pudina* 3 g, *sheera dana ilaichi* 3 g *in arqe- gawzaban* 150 ml *with sharbate anar* 25 ml orally in the morning and evening.
- *Zarishk, samaq, anardana, dana heel* finely grinded and given with *sikanjabeen lemooni* 25 ml half an hour after food.

## EVIDENCE BASED UNANI MEDICINAL PLANTS EFFECTIVE IN NVP

### 1. *Punica granatum* (Pomegranate)

The pomegranate belongs to plant family Lyhraceae [23] it is known as "Anar"[24] (Figure 1), it's said to be cold and wet. a way to treat NVP in Unani medicine is keeping pomegranate seeds and mint within the mouth[25,26]. One study evaluated the results of pomegranate and spearmint syrup on NVP. No health hazards are reported following the right administration of designated therapeutic dosages.[27,28]

**Figure 1:** *Punica granatum.*

### 2. *Citrus Limon* (Lemon)

The lemon is a plant of the family Rutaceae. It is known as "*Limoo*" ( figure 2) and has been used as an efficacious remedy for NVP in unani system of medicine, cold and dry in temperament. Lemon is rich in phenolic compounds, vitamins, minerals, fiber, and carotenoid oil and has analgesic, antiseptic, anti-emetic, and diuretic properties. In a study lemon aromatherapy led to a significant reduction in NVP compared to placebo[29]

**Figure 2:** Citrus limon.

### 3. *Mentha Piperita* (Mint)

Mint is a plant in the family Lamiaceae (Figure 3). The leaves of mint known as "*Na, na*" in Unani have also been used in the treatment of NVP. It is said to be warm and dry in temperament. In a double-blind RCT, the effect of aromatherapy with pure mint essential oil versus placebo was evaluated in 60 pregnant women with NVP.[2,24]

**Figure 3:** Mentha Piperita.

### 4. *Elletaria cardamomum* (Cardamom)

Cardamom is a member of the family Zingiberaceae (Figure 4). Cardamom (*Elletaria cardamomum*), known as "*Hil*" or "*Hel*", warm and dry. Aromatherapy with inhalation of cardamom oils is effective in relieving nausea caused by chemotherapy in patients with cancer. Ozgoli et al. (2015) demonstrated that intake of capsules containing 500 mg cardamom powder three times a day significantly reduced the severity of NVP.[5]

**Figure 4:** Ellataria cardamomum.

### 5. *Cydonia oblonga* (Quince)

The quince is a plant of the family Rosaceae. *Cydonia oblonga*, known as "*Behi*" ( Figure 5), is an important natural product used in the treatment of NVP.[21,22] In addition, it protects the fetus from abortion and is used as an appetizer. Wet and balanced in warm and cold in temperament . A clinical trial was carried out in Tehran, Iran on the effectiveness of *Cydonia oblonga* (quince) syrup for treatment of NVP. The results showed significantly decreased NVP in the group receiving quince syrup. No health risks or side effects are reported following the proper administration of designated therapeutic dosages.[24,30]

**Figure 5:** Cydonia oblonga.

## CONCLUSION

Unani scholars have taken rational steps based on the observations. They believed that three basic steps, i.e. lifestyle modification, nutrition and medicinal herbs, had great effects on NVP treatment. Therefore, this research can provide valuable information on the clinical use of herbal medicines in NVP and prepares the ground to investigate their potential medicinal use.

### Author's view

Long-term use of traditional medicines may indicate their efficacy, but it is recommended to conduct scientific studies to confirm their efficacy and safety. Scientific studies on these Unani medicines during pregnancy are required to determine their safety.

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